REMARKS

Claims 1-20 are pending in the present application. Claims 7 and 10-13 are canceled. Claims 21-24 are added for consideration of the Examiner. No new matter is inserted into the application.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Kristi L. Rupert, Ph.D. (Reg. 45,702) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,
BIRCH, STEWART, KOLASCH & BIRCH, LLP

By _____ #32,868
Gerald M. Murphy, Jr.
Reg. No. 28,977

P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000

KLR
GMM/KLR

Attachments: 1) Abstract of the Disclosure
2) Version with markings to show changes

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please amend the specification as follows.

Page 3, line between lines 17 and 19, insert

--**Brief Summary of the Invention**

Figures 1(A) and 1(B) depict the construction of the Bet v 1 polymers.

Figure 2 shows a coomassie stained SDS-PAGE gel with purified recombinant Bet v 1-monomer and Bet v 1-polymers.

Figures 3(A)-3(C) show the IgE reactivity of birch-pollen allergic patients with nitro-cellulose-blotted purified recombinant Bet v 1-monomer, dimer and trimer.

Figures 4(A)-4(D) show the determination of IgE reactivity of sera from birch pollen allergic patients with Bet v 1-monomer and polymers by ELISA.

Figures 5(A)-5(D) show the inhibition of IgE-binding to recombinant Bet v 1-monomer using Bet 1-polymers.

Figure 6 shows serum IgG_1-reactivity of Bet v 1-polymer immunized mice with recombinant Bet v 1.

Figure 7 shows the capacity of recombinant Bet v 1-polymers to induce histamine release.

Figures 8(A)-8(B) show binding of monoclonal anti-Bet v 1-antibodies to Bet v 1-derived peptides.--

Please replace the paragraph beginning on page 5, line 15, with the following rewritten paragraph:

--The second aspect of the invention is specific hyposensitization therapy. This therapy may be performed as known in the art for protein allergens and encompasses administering repeatedly to the mammal, typically a human individual, suffering from type I allergy against the protein allergen an immunogen that is capable of raising as IgG immune response against the protein allergen. Administration may be done systemically, for instance by injection, infusion, [i] etc., but also the oral route has been suggested in order to expose the intestinal part of the immune system. The immunogen may be admixed with suitable adjuvants such as aluminium oxide. [Se] See further Norman PS, "Current status of immunotherapy for allergies and anaphylactic reactions" Adv. Internal. Medicine 41 (1996) 681-713.--

Please replace the paragraph beginning on page 10, line 12, with the following rewritten paragraph:

--[Figur 5] Figures 5(A) to 5(D). **Inhibition of IgE-binding to recombinant Bet v 1-monomer using Bet v 1-polymers.**

Sera from 4 birch-pollen allergic patients (A-D) were preincubated with different concentrations (5µg, 500ng, 50ng and 5ng) of purified, recombinant Bet v 1-monomer, Bet v 1-dimer and Bet v 1-trimer. The preincubated sera were then tested for IgE-reactivity to purified, recombinant Bet v 1-monomer by ELISA. The optical densities are displayed on the y-axis.

Result: **IgE-binding to Bet v 1-monomer is inhibited by increasing concentrations of the Bet v 1-polymers in a dose dependent manner. The amounts of Bet v 1-polymers needed for inhibition at certain concentrations (50 ng versus 5 ng) was however approximately tenfold higher compared to the monomer.--**

IN THE CLAIMS

Please cancel claims 7 and 10-13 without prejudice or disclaimer of the subject matter contained therein.

Please amend the claims as follows:

1. (Amended) An immunogen derived from a protein allergen, [characterized in that said immunogen comprises] comprising:

a) a non-anaphylactic immunogenic recombinant fragment of the protein allergen, said fragment containing an IgG epitope partly but not wholly overlapping an IgE epitope of the protein allergen;

[b.] b) a polymeric form of said fragment, in which form the fragment constitutes the monomeric units; or

[c.] c) a non-anaphylactic recombinant polymeric form of said protein allergen having 2 to 10 monomeric units in which the protein allergen constitutes the monomeric units.

2. (Amended) The immogen according to claim 1, [characterized in that] wherein the polymeric form of said fragment is recombinantly produced.

3. (Amended) The immunogen according to claim 1 or 2, wherein [anyone of claims 1-2, characterized in that] said monomeric units are separated from each other by an oligopeptide linker[, typically consisting of 1-30 amino acid residue that may be hydrophilic].

4. (Amended) The immunogen according [to anyone of claims 1-3] claim 1 or 2, [characterized in that] wherein said immunogen also contains a carrier for the fragment in (a) and the polymeric forms in (b) and (c), respectively.

5. (Amended) The immunogen according to [any of claims 1-4] claim 1 or 2, [characterized in that] wherein the protein allergen is Bet v 1.

6. (Amended) The immunogen according to [any of claims 1-4] claim 1 or 2, [characterized in that] wherein said immunogen [it] is according to (b) or (c) [in claim 1].

8. (Amended) [The use of the immunogen according to any of claims 1-5 for the] A method for in vitro diagnosis of type I allergy in a mammalian individual, comprising:

administering the immunogen according to claim 1 or 2 to said mammalian individual; and

measuring an immune reaction to said immunogen by said mammalian individual.

9. (Amended) The [use] method according to claim 8, [characterized in that] wherein the immunogen is according to (b) and (c) [in claim 1].

14. (Amended) [Method] A method for the hyposensitization of a mammal suffering from IgE mediated allergy against a protein allergen, comprising the step of presenting the immune system of the mammal in vivo to an effective amount of an immunogen hyposensitizing the mammal against the allergen, [characterized in that] wherein the immunogen comprises

[a.] a) a non-anaphylactic immunogenic recombinant fragment the protein allergen, said fragment containing an epitope partly but not wholly overlapping an IgE epitope of the protein allergen;

[b.] b) a polymeric form of said fragment, in which form the fragment constitutes the monomeric units;

[c.] c) a recombinant polymeric form of said protein allergen in which the protein allergen constitutes the monomeric units.

15. (Amended) The method according to claim 14, [characterized in that] wherein the immunogen is a polymeric form of said fragment and is recombinantly produced.

16. (Amended) the method according to [anyone of claims 14-15] claim 14 or 15, [characterized in that] wherein the immunogen is a polymeric form and that said monmeric units are separated from

each other by a oligopeptide linker[, typically consisting of 1-30 amino acid residue that may be hydrophilic].

17. (Amended) The method according to [anyone of claims 14-15] claim 14 or 15, [characterized in that] wherein said immunogen also contains a carrier for the fragment in (a) and the polymeric forms in (b) and (c), respectively.

18. (Amended) The method according to [anyone of claims 14-15] claim 14 or 15, [characterized in that] wherein the protein allergen is Bet v 1.

19. (Amended) The method according to [anyone of claims 14-15] claim 14 or 15, [characterized in that] wherein the immunogen is according to (b) or (c) [in claim 1].

20. (Amended) The method according to claim 19, [characterized in that] wherein the number of monomeric units is an integer 2-10.

Please add the following claims:

--21. The immunogen of claim 3, wherein said oligopeptide

linker comprises 1-30 amino acid residues.--

--22. The immungen of claim 21, wherein said amino acid residues are hydrophilic.--

--23. The method of claim 16, wherein said oligopeptide linker comprises 1-30 amino acid residues.--

--24. The method of claim 23, wherein said amino acid residues are hydrophilic.--

IN THE ABSTRACT:

Please replace the abstract on file with the Abstract attached hereto on a separate page.